

ABSTRACT

A magnetic random access memory (MRAM) array and method for making the MRAM array are disclosed. The MRAM array includes magnetic storage cells, global word lines, magnetic word lines, read bit lines, selection devices, and write bit lines. Each magnetic word line has segments. Each segment is coupled with the global word line(s) such that each segment is separately selectable. Each segment is also coupled to a portion of the magnetic storage cells. The read bit lines are oriented at an angle with respect to the magnetic word lines. The read bit lines are coupled with the magnetic cells through the selection devices. The write bit lines are substantially parallel to the read bit lines. Preferably, the magnetic word lines include soft magnetic materials and are coupled to each magnetic storage cell through a thin, nonmagnetic layer. To reduce interference from currents in global word lines, the global word lines are also substantially parallel to the magnetic word lines.